

Post Concussion Syndrome in College Athletes: Challenges for Counselors and Faculty  
in Higher Education

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## Abstract

Recently, attention has focused on professional athletes with concussions. With the NFL's skepticism regarding concussions, some of their officials have been slow to acknowledge that concussions are linked to problems. (Belson & Schwarz, 2016). However, concussion related injuries in collegiate sports has taken on importance. When a cluster of symptoms occur in a persistent fashion following mild traumatic brain injury, post concussion syndrome can be suspected. This article will seek to define post concussion syndrome, identify symptoms and offer suggestions for counselors and professors in higher education who may come in contact with students with this condition. Counselors and faculty who work with college students who are currently involved in sports activities or may have been involved in the past, may find information about post concussion syndrome useful in providing services to these students.

Recently, attention has focused on professional athletes with concussions. With the NFL's skepticism regarding concussions, some of their officials have been slow to acknowledge that concussions are linked to problems (Belson & Schwarz, 2016). However, the NFL has been accused of denying related research or ignoring the association between football-related head injury. In the 2013 settlement with NFL players, the league did not admit wrongdoing (Goldman, 2017). Many of these issues were addressed in the movie, *Concussion* which was aired in 2015 (Landesman, 2015).

However, concussions in collegiate sports has taken on importance. When a cluster of symptoms occur in a persistent fashion following mild traumatic brain injury, post concussion syndrome has been suspected. Counselors and faculty who work with college students who are currently involved in sports activities or may have been involved in the past, may find information about post concussion syndrome to be useful in providing services to these students. This presentation will seek to define post concussion syndrome, identify symptoms and offer suggestions for counselors and professors in higher education who may come in contact with students with this condition.

Rose, Fischer and Heyer (2015) concluded in study of physicians who are members of the American College of Sports Medicine that a standard definition of post concussion syndrome does not exist. They surveyed 597 physicians and asked about the minimum number of symptoms that are required to diagnose post concussion syndrome. For one symptom 55.9 % responded; for two symptoms, 17.6 % responded and for three symptoms 14.6% responded. When asked about the minimum duration of symptoms in order to diagnose post concussion syndrome, 26.6% responded less than 2 weeks; 20.4 % responded for 2 weeks to a month and

33% responded with 1-3 months. The authors of this study suggested that a standard definition of post concussion syndrome would be useful for purposes of research and clinical practice.

Logan (2010) alluded to the elusiveness in the definition of post concussion syndrome. He referred to symptoms of a concussion as those that linger beyond expectations. If this occurs then post concussion syndrome is expected. However, debate existed with regard to the duration of the expectations of the symptoms. Complications in determining a diagnosis can be impacted by other symptoms and other disorders such as depression. Other symptoms of post concussion syndrome may include headaches, sleep problems, attention problems and mood disorders.

Post concussion syndrome was not listed as a diagnosis within the *Diagnostic and Statistical Manual of Mental Disorders-Fifth Edition* (DSM-5) (American Psychiatric Association, 2013). However, it has been included within The ICD-10 and the symptoms involve unspecific criteria (Iverson, 2006). Symptoms for post concussion syndrome can be evaluated based on checklists, interview or both. It has been found that persons with mild traumatic brain injury tend to report more symptoms on a checklist than simply sharing symptoms (Iverson, Brooks, Ashton & Lange 2010).

A history of prior concussions has been associated with an enhanced risk for persistent symptoms (Cancelliere, Hincapie, Keightley, Godbolt, Cote, Kristman, Cassidy, 2014). In addition to prior concussions, multiple concussions and an aggressive style of play along with a younger age were variables that have been used to explain persistent cognitive symptoms (Giza, Kutcher, Ashwal, Barth, Getchius, Gioia & Zafonte, 2013). The causes of persistent symptoms for athletes who were unable to return to routine activities after a concussion are difficult to explain. However, these athletes should be treated with coordinated care and by professionals

from several disciplines. Logan (2010) recommended the consideration of a thorough history of the injury, symptoms, academic or work challenges, family or social stress, previous treatment and neuropsychological testing. For treatment of persons with persistent symptoms, the Zurich 2012 panel that convened at the Fourth International Conference on Concussion in Sport held in Zurich in November 2012, encouraged the use of neuropsychological testing with a multidisciplinary team that can provide medical, evaluation of balance issues related to the inner ear, counseling and cognitive strategies (McCrory, Meeuwisse, Aubry, Cantu, Dvorak, Echemendia, & Turner, 2013). Knollman-Porter, Constantinidou & Marron, 2014 recommended the use of academic accommodations for athletes in intercollegiate settings.

Treatment guidelines promoted treatment during the first two months after diagnosis which included a) an initial concussion education and gathering of neurocognitive test scores to establish a baseline, b) concussion screening as soon as possible and continuous follow-up of symptoms, c) neurocognitive testing that includes physical and cognitive rest if symptoms persist, d) physician management of symptoms and e) academic accommodations if academic progress is impacted (Knollman-Porter, Constantinidou & Marron, 2014).

General symptoms that continue involve decreased energy levels, lightheadedness, headaches, sensitivity to light and sound, irritability, attention and memory issues, tenseness and depressed mood (Chachad & Khan, 2006; Eisenberg, Meehan, & Mannix, 2014; Marshall, 2012). Barlow, Crawford, Stevenson, Sandhu, Berlinger and Dewey, (2010); Chachad & Khan, 2007 and McCrea, 2008 identified symptoms that continue for more than three months as post concussion syndrome. Cancelliere et al. (2014) found that memory and attention issues and cognitive symptoms continued after a concussion.

Garden and Sullivan (2010) conducted a study of 49 college students to determine whether a relationship existed between post concussion syndrome and depression. The British Columbia Post-Concussion Inventory was used to assess post concussion syndrome and the Beck Depression Inventory II was used to assess depression. The most frequently reported symptoms of post concussion syndrome were headache 81%, fatigue 81%, irritability 78%, feeling tense 76%, poor concentration 73% and feeling sad 70%. The results of the Beck Depression Inventory II indicated that mild symptoms were reported more often than moderate to severe symptoms. However, a large number of healthy participants reported post concussion symptoms that were moderate to severe. There was a strong positive relationship between post concussion syndrome and depression (.66,  $p < .01$ ) which was similar to previous studies. The finding of post concussion-like symptoms among healthy individuals was also reported in previous studies.

For faculty members who encounter students with post concussion syndrome or students who may share previous experiences with head trauma and symptoms of concentration problems, headaches, irritability and other chronic and somatic complaints, they can be referred to campus counseling and health centers, as well as family physicians. Students who request instructional accommodations can be referred to the campus office that provide services related to the Americans with Disabilities Act. Faculty can also consider the use of academic supports and/or coordinate the use of academic supports with mental health professionals. The academic supports should be individualized and can include direct attention training (DAT) such as practice drills, metacognitive strategy instruction (MSI) which may include reading comprehension, studying for tests and notetaking and the use of assistive technology which involves the use of planners, calendars, wristwatches and computer software for time management (Sohlberg & Ledbetter, 2016).

Sohlberg and Ledbetter (2016) reviewed data from cases in a cognitive rehabilitation clinic with persons with post concussion syndrome with persistent symptoms. They focused on the effectiveness of academic supports. A total of 24 cases were identified. Treatment strategies were “direct attention training (DAT), metacognitive strategy instruction (MSI) to facilitate self-regulation of states of mind, academic tasks, and study skills, training assistive technology for cognition (ATC) for use in school and psychoeducational supports which included symptom monitoring paired with goal setting and/or concussion education” (p. 143). DAT program involved practice drills for each student while the MSI emphasized “self-regulation of academic task preparation and execution” (p. 143). Strategies used were “reading comprehension, studying tests, taking notes, and self-monitoring social behavior, the use of association, imagery, and elaborative encoding to assist students in recall of content for classroom tasks (e.g. tests)” (p. 143).

ATC (assisted technology for cognition) practices involved the utilization of planners, calendars and computer software (Schere, Hart, Kirsch & Schulthesis, 2005). ATC has been useful in enhancing cognitive functions associated with memory and attention difficulties, planning and time management (e.g., de Joode, van Heugten, Verhey & van Boxtel, 2010; Gillespie, Best & O’Neill, 2012; Sohlberg, Kennedy, Avery, Coelho, Turkstra, Tlvisaker, & Yorkston, 2007). ATC is usually recommended for use based on an assessment.

Counselors may find the use of psychoeducational supports as helpful. It may include providing information with regard to concussions, goal setting and tracking symptoms. With concussion education, clients are given handouts related to concussion. Goal setting addressed individual goals that clients desired to address. The last psychoeducational support of symptom monitoring encouraged clients to track their personal symptoms based upon “timing, duration,

severity, triggers and self-management attempts” (Sohlberg & Ledbetter, 2016, p. 144).

Woodrome, Yeates, Taylor, Rusin, Bangert, Dietrich and Wright (2011) found that the tracking of symptoms along with finding solutions and coping strategies was useful in decreasing the burden of symptoms.

The results of the study by Sohlberg & Ledbetter (2016) indicated that the treatment interventions were individualized to the client. An example was that the DAT was utilized with clients who had “processing deficits such as impairments in sustained attention or working memory”(p. 146). Psychoeducational supports identified goal setting for use with all clients and symptom monitoring was utilized with three clients. This study recommended that an individualized approach to working with clients with persistent symptoms of post concussion syndrome was advisable.

Since faculty members work primarily in an instructional role with students, they can encourage students who experience symptoms of post concussion syndrome to seek treatment from campus health centers, family physicians, campus counseling centers and campus ADA offices. For counselors who work with clients with post concussion syndrome, they should consider referrals to physicians and neuropsychologists who can confirm the diagnosis. In addition academic supports and referrals for accommodations based on the Americans with Disabilities Act can be undertaken.

As traumatic brain injuries continue to occur as a result of sports injuries, bicycle and car accidents and other causes, some people in the general population may never seek treatment. However, college athletes are more likely to receive treatment since they have to be cleared by athletic trainers and/or physicians in order to return to participation in athletic events. While the



definition of post concussion syndrome is not standardized, treatment protocol has been accepted. In addition, academic supports have been identified and can be easily provided.

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